REMARKS

Claims 1-26 are currently pending in this application. Claims 10-11 and 23-24 have been amended solely to change the dependency thereof. Accordingly, no new matter has been added.

Claim Objections

Claims 10-11 and 23-24 were objected to because of a lack of antecedent basis for the "predetermined angle" recited therein. Applicant has amended claims 10-11 to depend from claims 8 and 9, respectively, and has amended claims 23-24 to depend from claims 21 and 22, respectively. The "predetermined angle" term in each of claims 10-11 and 23-24 now has an antecedent basis present in the claims from which each is dependent. Accordingly, Applicant respectfully requests that the objection be withdrawn.

Claim Rejections Under 35 U.S.C. § 102(e)

Claims 1-26 were rejected by the Examiner under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent Application Publication No. 2006/0205174 (Hshieh). Applicant respectfully requests that the rejection of claims 1-26 be withdrawn for at least the following reasons.

Claims 1 and 14 are directed to a method of manufacturing a semiconductor device and recite, *inter alia* as follows (emphasis added):

> lining at least the trenches adjacent to the at least one mesa with an oxide material; and
>
> filling at least the trenches adjacent to the at least one mesa with one of a semi-insulating material and an insulating material.

Hshieh fails to disclose lining the trenches adjacent to the mesa with an oxide material after doping of the sidewalls and prior to filling the trenches.

Hshieh discloses a method of manufacturing a P-type semiconductor device. For example, a P-epitaxial layer is etched to form mesas separated by trenches at step 101. At step 103, the mesas and trenches are covered with a thin oxide layer. (Paragraphs [0078]-[0081]). This thin oxide layer can be seen in, for example, Fig. 3, designated by reference number 6, or

Fig. 27 designated by reference number 1506. In a subsequent step 104, a first implant is made to implant P dopant to one side of the mesas. In step 105, a second dopant implant is made to the opposing sides of the mesas. (Paragraph [0081]). Thus, deposition of a thin oxide layer on the mesas takes place before the doping of the sides of the mesas.

In contrast to Hshieh, claims 1 and 14 call for an oxide material to be deposited over the trenches adjacent the mesas after the doping of the trench sidewalls has been completed. This step provides a benefit of reducing charges on the surface of the silicon in the trenches because the oxide will "consume" the charges, thus leading to a more reliable semiconductor device. (See e.g., page 10, lines 20-28 of the present application). For a reference to anticipate a claim, the reference must include, either explicitly or inherently, all of the elements of the claim arranged as in the claim. M.P.E.P. § 2131. Hshieh fails to disclose all of the steps of claims 1 and 14 in the order provided, namely, that the deposition of oxide material over the trenches occurs prior to doping of the trench sidewalls. Hsieh therefore cannot anticipate claims 1 or 14. Accordingly, Applicant respectfully requests that the rejection of claims 1 and 14 be withdrawn.

Claims 2-13 are dependent on claim 1. Claims 15-26 are dependent upon claim 14. Applicant respectfully requests that the rejection of claims 2-13 and 15-26 be withdrawn, due at least to their dependence on claims 1 and 14, respectively.

CONCLUSION

In view of the foregoing Amendment and remarks, Applicant respectfully submits that the present application, including claims 1-26, is in condition for allowance and such action is respectfully requested.

Dated: October 28, 2009

Respectfully submitted,

By Clark Jobson (Reg. No 35,039) for:

John D. Simmons
Registration No.: 52,225
PANITCH SCHWARZE BELISARIO & NADEL LLP
One Commerce Square
2005 Market Street, Suite 2200
Philadelphia, Pennsylvania 19103
(215) 965-1268
(215) 965-1331 (Fax)
jsimmons@panitchlaw.com (E-Mail)

JDS/SEM
169987